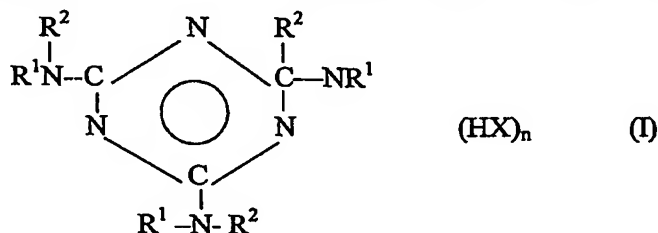


CLAIMS

## 1. A flame-retardant polymeric composition comprising:

- (i) a polymer;
- (ii) a triazine or a mixture of triazines of the general formula (I);



- where: -  $\text{R}^1$  and  $\text{R}^2$ , which are either the same as one another or different from one another, may be: H; a  $\text{C}_{1-6}$  alkyl group, either linear or branched, simple or substituted with chlorine or bromine; an aryl group, either simple or substituted with chlorine or bromine;
- X is chlorine or bromine;
  - $n = 0, 1, 2, 3$

(iii) a bismuth compound of formula  $\text{Bi}_z\text{A}_w$ ;

where: A is X, O,  $\text{CO}_3$ ,  $\text{O}_2\text{CO}_3$  or any other residue capable of forming a bismuth compound;

X is a halogen as defined above;

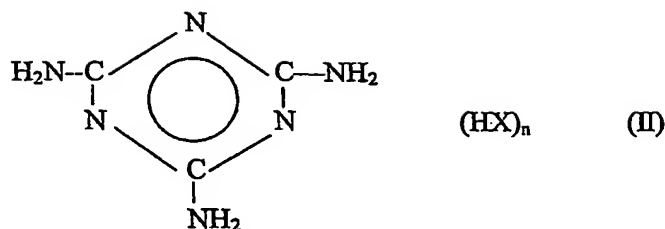
z and w are integers fulfilling the valences of Bi and A;

## (iv) a compound selected from the group consisting of red phosphorus, a phosphorous compound or an organic compound capable of forming free radicals,

in which:

- if  $\text{R}^1$  and  $\text{R}^2$  is H or a non-halogenated alkyl or aryl group and  $n = 0$ , then A is X;
- the maximum content of said halogen X on the total of the components from (i) to (iv) in said composition is 1 wt%.

2. The flame-retardant polymeric composition according to Claim 1, in which said triazine of formula (I) is a melamine or a mixture of melamines of formula (II), obtained from the formula (I) when  $\text{R}^1 = \text{R}^2 = \text{H}$ :



where :    - X is bromine;

          - n = 0, 1, 2, 3

3. The flame-retardant polymeric composition according to Claim 1, in which said bismuth compound is selected from the group consisting of bismuth bromide BiBr<sub>3</sub>, bismuth carbonate Bi<sub>2</sub>(CO<sub>3</sub>)<sub>3</sub> and bismuth subcarbonate (BiO)<sub>2</sub>CO<sub>3</sub>.
4. The flame-retardant polymeric composition according to Claim 2, in which said bismuth compound is bismuth carbonate or bismuth subcarbonate, and said mixture of melamines of formula (II) comprises at least one melamine in which n ≠ 0.
5. The flame-retardant polymeric composition according to Claim 1, in which said triazine of formula (I), expressed as percentage of nitrogen on the total of the components from (i) to (iv), is present in an amount from 0.01 to 1 wt%.
6. The flame-retardant polymeric composition according to Claim 5, in which said triazine of formula (I), expressed as percentage of nitrogen on the total of the components from (i) to (iv), is present in an amount between 0.05 and 0.9 wt%.
7. The flame-retardant polymeric composition according to Claim 6, in which said triazine of formula (I), expressed as percentage of nitrogen on the total of the components from (i) to (iv), is present in an amount between 0.08 and 0.8 wt%.
8. The flame-retardant polymeric composition according to Claim 1, in which said bismuth compound, expressed as percentage of elemental bismuth on the total of the components from (i) to (iv), is present in an amount from 0.01 to 0.5 wt%.
9. The flame-retardant polymeric composition according to Claim 8, in which said bismuth compound, expressed as percentage of elemental bismuth on the total of the components from (i) to (iv), is present in an amount between 0.02 and 0.04 wt%.
10. The flame-retardant polymeric composition according to Claim 1, in which said organic compound capable of forming free radicals is selected from the group consisting of: 2,3 dimethyl 2,3 diphenyl butane; 2,3 dimethyl 2,3 diphenyl hexane; poly (1,4-diisopropylbenzene).
11. The flame-retardant polymeric composition according to Claim 10, in which said

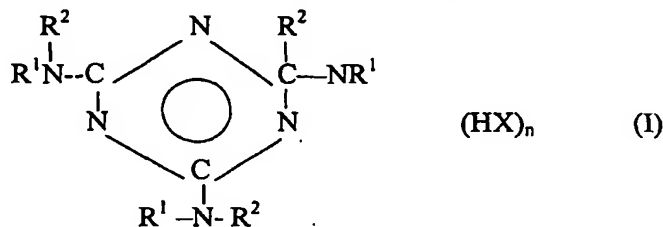
- organic compound capable of forming free radicals is present in an amount comprised between 0.01 and 1 wt% on the total of the components from (i) to (iv).
12. The flame-retardant polymeric composition according to Claim 11, in which said organic compound capable of forming free radicals is present in an amount comprised between 0.05 and 0.5 wt%.
  13. The flame-retardant polymeric composition according to Claim 1, in which said red phosphorus or phosphorous compound is present in an amount comprised between 0.05 and 2 wt% expressed as elemental phosphorous on the total of the components from (i) to (iv), and said phosphorous compound is selected from the group consisting of phosphorous oxides, inorganic or organic phosphates and phosphinates.
  14. The flame-retardant polymeric composition according to Claim 13, in which said red phosphorus or phosphorous compound is present in an amount comprised between 0.15 and 1 wt% on the total of the components from (i) to (iv).
  15. The flame-retardant polymeric composition according to Claim 2, in which the overall amount of bromine is not higher than 0.9 wt% on the total of the components from (i) to (iv).
  16. The flame-retardant polymeric composition according to any one of the preceding claims, in which said polymer (i) is a polyolefin.
  17. A concentrate of the flame-retardant polymeric composition according to any one of the preceding claims, in which the amount of active principles from (ii) to (iv) with respect to the polymer (i) is such that the amount of halogen X in said concentrate does not exceed the value  $n \cdot 1\%$ , where  $1 < n \leq 40$ .
  18. The concentrate of the flame-retardant polymeric composition according to Claim 17, in which  $5 \leq n \leq 20$ .
  19. A method for preparing the polymeric composition according to Claims 1-16 comprising mixing a concentrate according to Claim 17 or Claim 18 with fresh polymer (i) in an amount such as to bring the concentration of halogen X to a value not higher than 1 wt% on the total of said components (i)-(iv).

## AMENDED CLAIMS

[received by the International Bureau on 24 May 2005 (24.05.2005);  
original claim 1 amended; remaining claims unchanged (1 page)]

## 1. A flame-retardant polymeric composition comprising:

- (i) a polymer;
- (ii) a triazine or a mixture of triazines of the general formula (I);



- where:
- $\text{R}^1$  and  $\text{R}^2$ , which are either the same as one another or different from one another, may be: H; a  $\text{C}_{1-6}$  alkyl group, either linear or branched, simple or substituted with chlorine or bromine; an aryl group, either simple or substituted with chlorine or bromine;
  - X is chlorine or bromine;
  - $n = 0, 1, 2, 3$

(iii) a bismuth compound of formula  $\text{Bi}_z\text{A}_w$ ;

where: A is X, O,  $\text{CO}_3$ ,  $\text{O}_2\text{CO}_3$  or any other residue capable of forming a bismuth compound;

X is a halogen as defined above;

z and w are integers fulfilling the valences of Bi and A;

## (iv) a compound selected from red phosphorus or a phosphorous compound, alone or in combination with an organic compound capable of forming free radicals,

in which:

- if  $\text{R}^1$  and  $\text{R}^2$  is H or a non-halogenated alkyl or aryl group and  $n = 0$ , then A is X;
- the maximum content of said halogen X on the total of the components from (i) to (iv) in said composition is 1 wt%.

2. The flame-retardant polymeric composition according to Claim 1, in which said triazine of formula (I) is a melamine or a mixture of melamines of formula (II), obtained from the formula (I) when  $\text{R}^1 = \text{R}^2 = \text{H}$ :